

**IN THE UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF VIRGINIA  
ALEXANDRIA DIVISION**

VIRGINIA INNOVATION SCIENCES, INC.,	)	
	)	
Plaintiff,	)	Case No. 1:16-CV-00861(LO-MSN)
	)	
v.	)	
	)	
AMAZON.COM, INC.,	)	
	)	
Defendant.	)	
_____	)	

**MEMORANDUM IN SUPPORT OF MOTION OF DEFENDANT  
AMAZON.COM, INC. FOR SUMMARY JUDGMENT**

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#### **STATUTES**

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## **I. INTRODUCTION**

The Court's claim construction order establishes that each of the three remaining patents asserted against Amazon by Virginia Innovation Sciences, Inc. is not infringed, invalid, or both.

**U.S. Patent No. 8,135,398.** The Court held that the destination device for the multimedia content (*e.g.*, television) must be established before that content is received by the wireless terminal device (*e.g.*, cell phone). If the user can select the destination after the cell phone has received the content, "it is no longer within the scope of the claims." (Dkt. 139 at 14.) VIS's sole infringement theory relies on exactly what the Court's construction excludes: the cell phone user choosing to use Miracast to display content present on the cell phone. VIS has not presented any evidence or theory that the multimedia content is in any way directed to or destined for the destination television when is received by the user's cell. It is not. Additionally, under the Court's construction of "multimedia content item," VIS cannot show that the multimedia content item received by the accused Fire TV and Stick products is either the same item or in the same format as that received by the wireless terminal device from the source. (*Id.* at 22.) The Court should grant summary judgment of non-infringement on both of these grounds.

**U.S. Patent No. 9,369,844.** VIS has stipulated that Amazon does not infringe the '844 patent under the Court's claim construction, reserving its right to appeal. The Court should enter judgment accordingly. The Court has also noted that the specification provides no description for either the claimed automatic purchasing feature or a dual-purpose device that both monitors the status of an item and communicates the user's account information. (Dkt. 139 at 27-28.) The Court should therefore also grant summary judgment of invalidity for failure to comply with the written description requirement of 35 U.S.C. § 112(a). The asserted claims, which VIS amended to claim automatic purchasing and the dual-purpose device *after* Amazon had released the accused

Dash Button product, lack any underlying disclosure in the specification or original application.

**U.S. Reissue Patent No. RE46,140.** Amazon previously moved to dismiss on the grounds that the '140 patent claims patent-ineligible subject matter under 35 U.S.C. § 101. VIS opposed, contending that the claim requirement that buyer communications are switched between servers supplied a patentable inventive concept. The Court has now recognized that the patent fails to provide any description of how this claimed switching is performed. (Dkt. 139 at 46.) With the benefit of this observation and claim construction, it should now be clear that the '140 patent is drawn to an abstract idea, adds nothing inventive over the prior art, and preempts e-commerce methods that use a two (or more) server system to process credit card payment information. The '140 patent's lack of detail regarding switching also renders the patent invalid for violating the written description requirement. And VIS cannot show that the accused Amazon Pay service infringes because any alleged "switching" and any subsequent receipt of credit card information by Amazon occurs *before* an indication from the buyer to buy the one or more of the items, and not *after* such indication as the claims require; and Amazon has no control over how merchants transmit information about items for purchase. Therefore, the Court should grant summary judgment of invalidity and non-infringement of the '140 patent.

## **II. STATEMENT OF UNDISPUTED FACTS**

### **'398 Patent**

1. The '398 patent issued on March 13, 2012 and is directed to a method for converting multimedia information received from a wireless device and transmitting it for display on a destination device. (Ex. A<sup>1</sup> ('398 patent).)

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<sup>1</sup> All exhibits are to the Declaration of Laura Anne Kuykendall in Support of Motion of Defendant Amazon.com, Inc.'s for Summary Judgment.



2. VIS alleges that Amazon Fire TV 1st Generation, Amazon Fire TV 2nd Generation, Amazon Fire TV Stick 1st Generation, Amazon Fire TV Stick 2nd Generation, and Amazon Fire TV Gaming Edition (collectively “Fire TV and Stick products”) infringe claims 1, 2, 14, 16, 17, 20, 21, 23, 24, 31, 33, 35, 36, 37, 42, 43, 46-48, 52, 53, 55, 59, 64 and 65 of the ’398 patent. (Ex. D (VIS Preliminary Infringement Contentions) at 3.)

3. VIS’s expert did not address claims 52, 55, 59, and 64 of the ’398 patent in his infringement report, and therefore VIS no longer asserts these claims against Amazon. (*See* Ex. E (Melendez Infringement Report) at 73-170.)

4. Asserted independent claim 1 and asserted dependent claims 2, 16, 17, 20, 21, 23, 24, 31, 33, 35, and 36 are directed to a to a method for converting multimedia information received from a wireless device and transmitting it for display on a destination device. (Ex. A.)

5. Asserted independent claim 14 and dependent claims 37, 42, 43, 46, 47, 48, and 53 are directed to computer readable media containing code to perform the method for converting multimedia information received from a wireless device and transmitting it for display on a destination device. (Ex. A.)

6. Asserted claim 65, which depends on cancelled claim 15, is directed to a wireless terminal apparatus for use in performing the method for converting multimedia information received from a wireless device and transmitting it for display on a destination device. (Ex. A.)

7. All asserted claims require that the received multimedia content item be destined for a destination device located within either a home location (claim 1) or designated location (claim 14 and 15). (Ex. A.)

8. The Court construed “destined for a destination device located within the home/designated location” to mean “directed to a destination device within the home/designated location” whereby

the “the destination device must be established as the destination [for the multimedia content item] before the media content is received.” (Dkt. 139 at 14.)

9. VIS contends that infringement occurs when a user receives multimedia content from a network on her cell phone and then chooses to mirror their cell phone screen to a television connected to an accused Fire TV or Stick using Miracast. (Ex. E at 78-83.)

10. Before a multimedia content item is received by the user’s cell phone, there is no indication that the multimedia content item will be sent to the accused Fire TV or Stick product or to the television. (Ex. F (Johnson Supplemental Report) at ¶¶ 8-9; (Ex. G (Zarka Depo. Tr.) at 99:9-100:6.) Neither the new video nor the process used by Miracast to create the new video knows anything about the source of the video streamed to the cell phone. (Ex. G at 99:9-100:6; Ex. H (Johnson Non-infringement Report) at ¶ 79.) Likewise, a source that streams a video to the cell phone is unable to determine whether the phone’s display is being Miracast to another device. (Ex. G at 99:9-100:6; Ex. H at ¶ 89.) Miracast cannot distinguish a video received from an outside source from a video or other display content generated on the phone; it simply generates a new video based on whatever is displayed on the cell phone’s screen. (*Id.*)

11. The asserted claims also require that “the multimedia content item is received through a wireless communication network and from a wireless terminal device” and the multimedia content item is then “convert[ed] . . . for reproduction according to a determined signal format of the destination device.” (Ex. A.)

12. The Court construed “multimedia content item” to mean “the multimedia content in the format received by the wireless terminal device from the source.” (Dkt. 139 at 22.)

13. The multimedia content received by the Amazon Fire TV or Stick product is neither the same content nor in the same format as the multimedia content received by the cell phone. When

a video is streamed from a cell phone to the Fire TV or Stick using Miracast, the video is *always* generated locally on the cell phone and includes everything displayed on the cell phone. (Ex. H at ¶¶ 70-71; Ex. G at 42:11-20.) This video is different from a video generated from an outside source (*e.g.*, YouTube) and streamed to the cell phone. (*Id.*) The format (*e.g.*, frame rate and resolution) of the video streamed to the cell phone depends on the format of the source video. (Ex. F at ¶ 11.) The frame rate format of videos transmitted from the cell phone to the Fire TV or Stick is set by Miracast as 30 frames per second, and the resolution format of the video depends on the resolution of the cell phone display. (*Id.*; Ex. E at 79.)

14. Video formats include the frame rate and resolution of the video. (Ex. F at ¶ 11; *see* Ex. I (VISINC015187); Ex. J (AMZ-VIS00006900-04).)

15. The format of the content transmitted by the user's cell phone to the Fire TV or Stick product is different than the multimedia content item received by the user's cell phone from the source both in frame rate and resolution. (Ex. F at ¶ 11.)

16. VIS's only offered theory regarding this limitation as construed by the Court is that both the multimedia content item received by the user's cell phone and the content transmitted by the phone to the Fire TV or Stick product may be encoded using the same video compression standard. (*See id.* at ¶ 12; Ex. G at 55:21-59:7.)

17. A codec is a data compression algorithm. (*See* Ex. F at ¶ 12; Ex. G at 25:3-5, 97:3-6.) Data compression algorithms avoid the need to transmit every single bit (*i.e.*, every 1 or 0) associated with a video file. (Ex. G at 96:5-20.) Instead, the algorithm represents the bits in a way that reduces the amount of bits that need to be transmitted while maintaining the format of the underlying video content. The device receiving the compressed video uses the algorithm to reverse the process and identify and play the video. (*Id.*)

18. Codecs such as H.264 and AAC are not formats of multimedia content. They are industry standards describing steps that can be performed to compress multimedia content for transmission; they do not describe the format of the multimedia content itself. (*Id.* at 25:3-7.) The fact that two multimedia content items are compressed using the same algorithm says nothing about whether their content or format is the same. (*Id.* at 97:20-98:21.)

19. VIS does not assert that Amazon has performed all the steps of method claims 1, 2, 16, 17, 20, 21, 23, 24, 31, 33, 35, and 36 of the '398 patent, or that it directs and controls others to perform steps in conjunction with Amazon's performance of the remainder of the claims. (*See* Ex. D at 3; Ex. K (Melendez Depo. Tr.) at 110:18-24; 119:23-120:20; 123:12-17.)

20. VIS has not identified any Amazon customer who has used a cell phone to stream content received from a network to an accused Fire TV or Stick product to view the content on a television. (*See id.*)

21. VIS has not identified any communications from Amazon instructing its customers to download multimedia content from a cellular network to a cellular phone and then mirror their display using Miracast to an accused Fire TV or Stick product where the content could be displayed on an attached television.

22. VIS has not shown that Amazon was aware of the '398 patent prior to VIS filing suit.

**'844 patent**

23. The '844 patent issued on June 14, 2016. VIS accuses the Amazon Dash Button of infringing claims 28-60. (Ex. B ('844 patent); Ex. D at 2.)

24. VIS has stipulated to the non-infringement of the accused Amazon Dash Button while reserving its right to appeal the Court's Claim Construction Order. (Ex. L (August 24, 2017 W. Bradley ltr. to D. Hadden); *see also* Ex. M (Melendez Supplemental Report) at 6).)

25. Claims 28-60 of the '844 patent require a single “wireless device” or “wireless signal transmitter” that transmits: (1) an item status signal, (2) a unique identifier corresponding to the wireless device, and (3) user account information. A “purchase request for merchandise regarding the updated condition” is then made “based on a successful transmission of the item status signal.”

26. The specification of the '844 patent does not disclose a single wireless device or wireless signal transmitter that transmits: (1) “an item status signal,” (2) a “unique identifier corresponding to the wireless device,” and (3) user account information. (Ex. B; Dkt. 139 at 27-28.)

27. The specification of the '844 patent discloses two wireless devices and/or wireless signal transmitters, a diaper condition sensing module (DCSM) and a user equipment (UE).

28. The DCSM described in the specification does not contain or transmit user account information. (Ex. B at 10:8-9, 46-67.)

29. The UE described in the specification does not transmit an item status signal. ('844 patent at 4:29-36, 12:46-50.)

30. The UE described in the specification does not transmit a unique identifier. The UE has a “Tag ID” associated with user account information. (Ex. B at 7:66-8:2; *see also* Dkt. No. 139 at 36-37.) The TagID is used to authenticate a purchase request but does not initiate a purchase. (Ex. B at 8:60-9:7; Dkt. No. 139 at 41-42.)

31. The asserted claims require the “processing of a purchase request for the merchandise regarding the updated condition based on a successful transmission of the item status signal,” and thus “cover a process in which products are *automatically* ordered based on a detected updated condition of some merchandise.” (Ex. B; Dkt. 139 at 27.)

32. The process of automatic ordering based on a detected updated condition of some merchandise “is not described at any point in the specification.” (Dkt. 139 at 27; *see also* Ex. B.)

**'140 patent**

33. The '140 patent is a reissue of U.S. Patent No. 6,618,705, which issued on September 9, 2002. The '140 patent reissued on September 6, 2016, and the reissued claims are directed to securely processing credit card payments for online purchases by switching the user from a “Web, DB server” (i.e., a merchant server) to a payment server. (Ex. C.)

34. VIS accuses Amazon Pay of infringing claims 17-20 of the '140 patent. (Ex. D at 1.)

35. Claims 17-20 of the '140 patent require “receiving, at the payment server, credit card payment information transmitted from a buyer for payment of one or more items identified for purchase from a website listing the items, wherein the credit card payment information is received after online communication of the buyer has been switched from the website listing the items to a website supported by the payment server, wherein the switching of the online communication of the buyer is after an indication from the buyer to buy the one or more of the items.”

36. The Court has construed “online communication of the buyer has been switched from the website listing the items to a website supported by the payment server” according to its plain meaning. (Dkt. 139 at 47.)

37. The '140 patent discloses conventional servers supporting a merchant's website listing the items and a payment server. (Ex. C.)

38. The '140 patent discloses encryption protocols which were common at the time of the invention in 2000, including 128 bit encryption for credit card payment information and Security Socket Layer Protocol (SSL). (*Id.* at 2:4-13, 5:11-15, 8:19-22, 8:35-36, 8:64-67, 9:15-16; Ex. N (Neuman Invalidity Report) at ¶¶ 89-90.)

39. The '140 patent does not disclose a means of accomplishing switching from the website listing the items to a website supported by the payment server. (*See* Ex. C at 4:33-39, 5:37-40,

7:66-8:5, 8:45-51; Dkt. 139 at 46-47.)

40. Users switching from a less secure server connection to a more secure server connection was well-established at the time of the invention in 2000. (Ex. N at ¶ 91.)

41. During the reissue prosecution of the '140 patent, the applicant conceded that the system claimed in U.S. Patent No. 5,822,737 by Ogram switched users from a less secure server connection to a more secure server connection. (Dkt. 108-1 at Exs. Q-X.)

42. The specification of the '140 patent discloses switching from a particular merchant website to the payment server after the buyer provides an indication to buy. (Ex. C at claims 17, 19; 4:33-39.)

43. The specification does not describe or reference any programming, algorithm, or other means to switch the user from the merchant server to the payment server. (Ex. C.)

44. On Amazon Pay, switching from the merchant site to the Amazon payment server occurs before a buyer has selected any prompt to complete a purchase of any item from the merchant site. (Ex O (Neuman Non-Infringement Report) at ¶ 65.)

45. Credit card information is received by Amazon from the buyer before the indication from the buyer to buy any item on the merchant website. (Ex. O at ¶ 46.)

46. Amazon does not implement or control the level of security for transmissions between the buyer and merchant website. (Ex. O at ¶¶ 105-106.)

### **III. VIS CANNOT SHOW THAT AMAZON INFRINGED THE '398 PATENT.**

There is no genuine issue of material fact that the accused Fire TV and Stick products do not infringe any of the asserted '398 patent claims.<sup>2</sup> The claims require receipt of a multimedia

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<sup>2</sup> VIS accuses Amazon Fire TV and Stick products of infringing claims 1, 2, 14, 16, 17, 20, 21, 23, 24, 31, 33, 35, 36, 37, 42, 43, 46-48, 53, and 65. (Ex. D at 3.) VIS also accused Amazon of infringing claims 52, 55, 59, and 64, but its expert did not address these claims in his report. (See

content item from a wireless terminal device that is destined for a destination device within the home location. VIS cannot show the accused products meet either of the following claim limitations: (i) receipt by a wireless terminal device of a multimedia content item “destined for a destination device” and (ii) the multimedia content item received by the wireless terminal device is in the same format as the multimedia content item received by the accused Fire TV and Stick products. Nor can VIS show that Amazon performed all required steps of the asserted method claims.

Summary judgment is appropriate where “the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law.” Fed. R. Civ. P. 56(a). “Direct infringement requires a party to perform or use each and every step or element of a claimed method or product.” *BMC Res., Inc. v. Paymentech, L.P.*, 498 F.3d 1373, 1378 (Fed. Cir. 2007), *overruled on other grounds by Akamai Techs., Inc. v. Limelight Networks, Inc.*, 692 F.3d 1301 (Fed. Cir. 2012). Because VIS bears the burden of establishing infringement, Amazon need only point out that there is an absence of evidence supporting VIS’s case. *See Celotex Corp. v. Catrett*, 477 U.S. 317, 323 (1986). If VIS cannot then make a sufficient showing on an essential element, Amazon is entitled to judgment as a matter of law. *See id.* at 322.

The ’398 patent is directed to a method for converting multimedia information received from a wireless device and transmitting it for display on a destination device.<sup>3</sup> This method consists of four steps. First, a “wireless terminal device” (i.e., a cell phone) receives through a “wireless communication network” (i.e., a cellular network) a “multimedia content item originated from

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*id.*; Ex. E at 73-170.)

<sup>3</sup> Independent claim 1 is directed to a method, claim 14 to computer readable media containing code to perform that method, and cancelled claim 15 to a wireless terminal apparatus for use in performing the method. All remaining asserted claims depend from one of these claims.



a source located outside a home/designated location.” This multimedia content item must be “destined for a destination device” within the home/designated location when it is received by the “wireless terminal device.” (Ex. A at 29:10-17, 20-23.) The Court construed “destined for a destination device” to mean “directed to a destination device within the home/designated location.” (Dkt. 139 at 14.) In so doing, the Court explained that the multimedia content cannot have the wireless terminal device as its final destination when it is received, and must instead have the destination device as its final destination. (Dkt. 139 at 11.) The Court also emphasized that the destination of the multimedia content cannot be determined by the cell phone’s user. (*Id.* at 14.) Second, the multimedia content item received is converted “according to a determined signal format” of the television. (Ex. A at 29:18-20.) Third, a “predetermined channel” is established “operatively in communication with the destination device.” (*Id.* at 29:24-25.) Finally, the converted multimedia content item is transported to the television “via said predetermined channel” and “display[ed] . . . in conjunction with a navigational command to the destination device for the predetermined channel.” (*Id.* at 29:26-30.)

Amazon Fire TVs and Sticks are streaming media products that allow users to “[e]njoy over 15,000 apps, games, and Alexa skills including access to over 300,000 TV episodes and movies on Netflix, Amazon Video, HBO NOW, Hulu, and more.” (Ex. P (AMZ-VIS00006588-98) at AMZ-VIS00006588.) The Fire TV connects to a television using an HDMI cable, and connects to the Internet using either a wired Ethernet connection or over Wi-Fi. (*Id.* at AMZ-VIS00006593.) The Fire TV Stick plugs directly into the HDMI port on a television and connects to the Internet over Wi-Fi. (Ex. Q (AMZ-VIS00006608-19) at AMZ-VIS00006613-14.)

The Fire TV and Stick products enable users to stream content from the Internet for display on a television. (*See* Ex. H at ¶¶ 30-34.) They are configured to receive content directly from the

Internet via Wi-Fi/Ethernet from a router. (*Id.*) This is the typical way in which users stream content from the Internet to a television through these products. (*Id.*) VIS does not allege that this method infringes the '398 patent.

Instead, VIS contends that the asserted claims can be infringed when a user receives on her cell phone multimedia content from a cellular network, and chooses to stream this same content from the phone to a Fire TV or Stick device via Wi-Fi using a Miracast connection. (Ex. E at 78-83.) Miracast was a minor feature provided with the Fire TV and Stick products. (Ex. H at ¶ 34.) Its primary use was to allow users to display content stored on their phones on a television. (Ex. G at 40:12-41:9; Ex. H at ¶ 153.) The feature was rarely used and had a high malfunction rate requiring costly customer support. (Ex. G at 27:4-28:13, 38:18-39:2.) As a result, Amazon eliminated Miracast from its tablet devices in 2015 and from Fire TV and Stick in early 2017. (*Id.* at 87:18-88:2.)

VIS does not even accuse the typical use of Miracast of infringement. It focuses on the particular instance in which a video is streamed from the Internet to a cell phone, and then Miracast to a Fire TV or Stick. (VIS has not provided evidence of a single Amazon customer using Miracast in this manner.) This use cannot infringe given how Miracast works. Miracast creates a video of everything displayed on the cell phone's screen. (Ex. H at ¶ 70; Ex. G at 42:11-20.) Whether the screen is displaying a photograph, video, or receiving an incoming call, Miracast captures what is on the screen from the frame buffer at a rate of 30 frames per second and transmits that capture to the Fire TV or Stick. (Ex. H at ¶ 70; Ex. E at 79; Ex. U (Johnson Depo. Tr.) at 81:10-82:20; Ex. G at 61:16-62:4.) The parties do not dispute that this is how Miracast works. (*Id.*)

Accordingly, Miracast does not transmit a multimedia content item received from the outside source to the Fire TV or Stick. (Ex. H at ¶ 70; Ex. G at 42:11-20.) Instead, it transmits a new

video created on the cell phone from whatever is on the display. (*Id.*) The content and format of this new video differs from the original item received from the source. (Ex. H at ¶¶ 70-71; Ex. G at 42:6-20.) Likewise, the multimedia content item from the outside source is not “destined” for the television, and in fact it never reaches the television. (*Id.*) The video from the outside source simply arrives for display at the cell phone. A separate video is created of the cell phone screen and transmitted using Miracast to the Fire TV or Stick. (*Id.*) Neither the new video nor the process used by Miracast to create it knows anything about the source of the original video. (Ex. G at 99:9-100:6; Ex. H at ¶ 79.) Nor can the Miracast process distinguish a video received from an outside source from a video or other display content generated on the phone. (*Id.*) Similarly a source that streams a video to the phone does not and cannot know whether the phone’s display is being Miracast to another device. (Ex. G at 99:9-100:6; Ex. H at ¶ 89.)

VIS cannot establish infringement under this theory because (i) the multimedia content received by Fire TV or Stick products from a user’s cell phone were not destined for either of those products or the connected television prior to being received by the user’s cell phone; (ii) the multimedia content item received by the Fire TV or Stick device is neither the same content nor in the same format as the multimedia content item received from the outside source; and (iii) VIS cannot show that Amazon or anyone else performed all steps of the asserted method claims.

**A. Fire TV and Stick do not receive from a wireless terminal device “a multimedia content item originated from a source located outside a home/designated location and destined for a destination device located within the home/designated location.”**

Each asserted claim of the ’398 patent requires “receiving a multimedia content item originated from a source located outside a [home/designated location] and *destined for a destination device* located within the [home/designated location], wherein the multimedia content item is received through a wireless communication network and from a wireless terminal device.” (Ex. A,

claims 1, 14, and 15 (emphasis added).) The Court construed “destined for a destination device” to mean “directed to a destination device within the home/designated location.” (Dkt. 139 at 14.) It further explained that “the multimedia content cannot have the wireless terminal device as its final destination in order to fall within the scope of the claims,” and must instead have the destination device as its final destination. (Dkt. 139 at 11.) Moreover, the Court rejected any construction that would permit the multimedia’s destiny to be determined by the cell phone’s user. (*Id.* at 14 (“If the free will of the cell phone’s user can dictate the destiny of the multimedia content item, then it is no longer within the scope of the claims.”).) Under the Court’s construction there is no genuine issue of material fact that the accused Fire TV and Stick products do not perform the claim limitation.

Under VIS’s infringement theory, multimedia content (*e.g.*, an online music video) is received at a user’s wireless terminal device (*e.g.*, a cell phone) through a wireless communications network (*e.g.*, a cellular network) from a source located outside a home/designated location (*e.g.*, YouTube). (Ex. E at 78-83; Ex. R (Melendez Infringement Report, claim chart 398-01) at 14-20; Ex. M at 17-24.) The cell phone then transmits the music video to the accused Fire TV or Stick device for display on a destination device (*e.g.*, television). (*Id.*)

Notably, VIS provides no evidence that the music video is directed to a destination device before it is received at the user’s cell phone. In a supplemental expert report following the Court’s claim construction order, Dr. Melendez describes streaming a YouTube music video to his cell phone and then transmitting the video to the accused Stick device for display on a television. (Ex. M at 17-19.) According to Dr. Melendez, “[w]ithout any user actions or involvement during or after the Miracast connection is established, the multimedia content item is directed to a television within the home location, as it was destined.” (*Id.* at 21.) To begin with, this conclusory “opinion”

is insufficient to meet VIS's burden to create a triable issue of fact that the accused products infringe the "destined for a destination device" limitation. *Davis v. McDowell*, 596 F.3d 1355, 1363–64 (Fed. Cir. 2010) ("The case law is clear, however, that an expert's naked conclusion is insufficient to survive summary judgment."); *Aristocrat Techs. Australia PTY Ltd. v. Int'l Game Tech.*, 709 F.3d 1348, 1360-61 (Fed. Cir. 2013) (rejecting "conclusory, unsupported assertions by experts"). But even accepting this naked conclusion as true, VIS is still unable to show infringement because the destiny of the multimedia content item is determined by the user. A Miracast connection can only be established by a user selecting an option to do so on her cell phone to transmit content to the Fire TV or Stick. (Ex. M at 21.) In so doing, the user herself determines the destiny of content displayed on her cell phone, contrary to the Court's construction. (Dkt. 139 at 14.)

In fact, the multimedia content item is not directed to the television prior to being received at the user's cell phone, as that is simply not how Miracast works. Miracast creates a new video of anything and everything displayed on the screen. (*Id.* at 31.) The data captured and transmitted by Miracast are therefore generated locally at the cell phone's screen. (Ex. H at ¶¶ 55-56.) Neither the content item itself nor the source device includes any indication that the content item itself is directed to a destination device prior to being received. (Ex. G at 99:9-100:6.) VIS does not identify what "external source" defines this destiny, as the Court's construction requires, because it cannot. (Dkt. 139 at 14.)

Before the streamed multimedia content is received by the cell phone, there is no indication in either the content or the cell phone that the content streamed to the cell phone will be transmitted for display on the television. (Ex. G 99:9-100:6; *see also* Ex. H at ¶¶ 84-90; Ex. F at ¶¶ 8-9.) This makes sense because the content streamed to the cell phone is not the same content streamed from

the cell phone to the Fire TV or Stick product using Miracast. They are separate: the first is generated by the outside source (*e.g.*, YouTube), and the second is generated locally at the cell phone to reflect whatever is on the cell phone screen. The content as received by the cell phone was simply sent destined to the cell phone itself. (*Id.*) The Court has already determined that this does not satisfy the “destined for a destination device” limitation. (Dkt. 139 at 11 (“the multimedia content cannot have the wireless terminal device as its final destination.”).)

In addition, because the Miracast standard only concerns the connection between the cell phone as the Miracast source and the Fire TV or Stick as the Miracast sink, the cell phone transmitting the content generated locally at the cell phone still has no knowledge of the destination television on which the locally generated content will ultimately be displayed. (*Id.*) Not until content is ultimately received at the Fire TV or Stick is there any knowledge that the content will end up at the television. (*Id.*)

VIS provides no basis to conclude the accused Fire TV and TV Stick products infringe under the Court’s construction, and the Court should therefore grant summary judgment.

**B. The “multimedia content item” received by the Fire TV and Stick products from a “wireless terminal device” is not in the same format as the “multimedia content item” that “originated from a source located outside a home/designated location.”**

The asserted claims require “receiving a multimedia content item originated from a source located outside a home/designated location” and “the multimedia content item is received through a wireless communication network and from a wireless terminal device.” (Ex. A, claims 1, 14, and 15.) The Court confirmed that “the multimedia content item” received from the wireless terminal device must be “in the format received by the wireless terminal device from the source.” (Dkt. 139 at 22.)

Under VIS's theory, Fire TV and Stick meet this limitation because a user can stream multimedia content (e.g., a music video) from the internet to her cell phone and then transmit the multimedia content from the cell phone to the Fire TV or Stick product through a Miracast Wi-Fi connection for display on a television. (Ex. E at 78-83; Ex. R at 14-20.)

This theory fails, because the multimedia content received by the Fire TV or Stick product from a user's cell phone is neither the same content nor in the same format as the content received by the cell phone from the outside source. (Ex. F at ¶ 11; Ex. G at 94:9-95:12.) Both the content and the format of that content are created anew on the cell phone based solely on whatever is displayed on the cell phone screen and in a format dictated by the cell phone display. (Ex. H at ¶¶ 80-81.) In particular, Miracast captures whatever appears on the cell phone screen—and *only* what is on the cell phone screen, regardless of how it got there—and sends it to the Fire TV or Stick product. (*Id.*) VIS's expert concedes that the stream sent to the Fire TV or Stick is generated locally at the cell phone. (Ex. E at 79.) As such, there is no dispute about how Miracast works. Because the phone screen is forwarded, not the media stream, the multimedia content item received by the Fire TV or Stick device is not the same as the one that originated from a source outside the home/designated location and received by the wireless terminal device (*i.e.*, cell phone).

Testing performed by Amazon's expert Dr. Johnson confirms that the content sent over Miracast Wi-Fi to the accused Fire TV and Stick products is a new multimedia content item, locally generated on the cell phone. (*See* Ex. H at ¶¶ 64-81.) In these tests, screen captures from an Android IP phone playing a video using YouTube were transmitted using Miracast to a television. (*Id.* at ¶¶ 68-70.) The images below each compare screenshots from the YouTube video with the same frames as they displayed on the destination television using Miracast. FIG. 1A is a cell phone screenshot from the video. FIG. 1B depicts the destination television screen after Dr. Johnson

pressed the “volume up” button on his cell phone, causing the volume control to appear on the television display. (*Id.* at ¶¶ 69-70.)



FIG. 1A



FIG. 1B

Similarly, FIG. 2A is a cell phone screenshot 1 from the video. FIG. 2B shows the destination television screen as Dr. Johnson received an incoming call on the phone, causing the “incoming call” notification to appear on the destination television. (*Id.* at ¶¶ 69, 72.)



FIG. 2A



FIG. 2B

These examples, and the others in Johnson’s report, show that Miracast does not transmit the multimedia content item received by the cell phone. Instead, it creates a new multimedia content item locally on the cell phone that mirrors everything from the cell phone’s screen. (*Id.* at ¶¶ 73-74.) It is this different content that is transmitted to the destination television. (*Id.*) There is no dispute that this is how Miracast works. (*See Ex. E at 79.*)

There is further confirmation that the multimedia content transmitted by the cell phone is



not in the same format as the multimedia content received from the source. The format of a multimedia video file necessarily includes a frame rate and resolution of the video.<sup>4</sup> (*See* Ex. F at ¶¶ 11-12.) The frame rate of the video received by the cell phone depends on the format of the source video. (*Id.* at ¶ 11.) For example, the frame rate of the video in Dr. Johnson's YouTube test was 24 frames per second. (*Id.*) Miracast, however, always samples the cell phone screen at 30 frames per second, producing a new video stream with a different format than the format of the video received from the source. (Ex. S (AMZ-VIS00001544).) Further, the resolution of the multimedia content transmitted using Miracast depends on the cell phone itself, regardless of the resolution of the multimedia content received by the cell phone from the source. (Ex. F at ¶ 11.) The resolution of Dr. Johnson's cell phone screen, for example, is 1080p, but the YouTube video received at his cell phone during testing had a resolution of 480p. (*Id.*) The video received by the cell phone, therefore, had a different resolution (480p) than the video transmitted by the cell phone using Miracast (1080p). As such, both the frame rates and resolutions of the two videos were different. Neither the content transmitted nor their formats, therefore, are the same between the video received by the cell phone from the outside source and the video transmitted by the cell phone to the accused Fire TV and Stick products. (*Id.*)

VIS offers a single infringement theory that does not address the format of the multimedia content items. In particular, it contends that because Miracast uses a standard video compression algorithm that is often also used in streaming video over the internet, the "format" of the two video

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<sup>4</sup> This is confirmed by the HDMI Specification cited by Dr. Melendez and the Miracast (Wi-Fi Display) Specification, both of which make clear that video format refers to the frame rate and resolution of the video. (*See* Ex. I at VISINC015187 (listing specific resolutions and frame rates as video formats supported by HDMI); (Ex. J at AMZ-VIS00006900-04 (providing a table of video formats identified by resolution and frame rate).)

signals are the same.<sup>5</sup> That is not the case. The “H.264 video format” and “AAC format audio,” as VIS calls them, are nothing more than specific video and audio codecs. A codec is an algorithm for compressing and decompressing data for transmission. (*See id.* at ¶ 12; Ex. G at 25:3-5, 97:3-6.) Codecs allow devices to communicate with one another by sending content represented by the least number of bits possible while maintaining as much quality as possible. (Ex. G at 96:5-20.) In other words, codecs avoid the need to transmit every single bit (*i.e.*, 1 or 0) associated with a video. (*Id.*) Instead, the codecs represent all the bits in a way that reduces the amount of bits that need to be transmitted while maintaining the format of the underlying content (*e.g.*, video). (*Id.*) The device receiving the compressed video uses the codec to reverse the algorithm such that it is able to identify and play the video. (*Id.*)

Codecs such as H.264 and AAC are not formats of multimedia content. They are industry standards describing steps that can be performed to multimedia content for transmission; they do not describe the format of the multimedia content itself. (*Id.* at 25:1-7.) The fact that two multimedia content items are compressed for transmission using the same algorithm says nothing about whether their content is the same or in the same format. (*Id.* at 97:20-98:21.) Two video files in different formats can still be encoded for transmission using the same H.264 compression algorithm. Such is the case here: the content item received by the cell phone is different from the content item transmitted by the cell phone, and the two have different formats. (*Id.* 95:2-99:8).

Thus, contrary to the claim requirements and VIS’s infringement theory, the accused Fire TV and Stick products receive content generated on the user’s cell phone from whatever is displayed on the cell phone’s screen, which is not the same video signal nor in the same format as the

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<sup>5</sup> *See* Ex. M at 20-24 (“a wireless terminal device receives multimedia content in H.264 video format (*e.g.* accompanied by AAC format audio), and sends multimedia content in H.264 video format (*e.g.* accompanied by AAC format audio)”).

multimedia content item received on the cell phone that originates from a source outside a home/designated location. Amazon is entitled to summary judgment of non-infringement.

**C. VIS Has Adduced No Evidence that Amazon Has Ever Directly Infringed the Asserted Method Claims of the '398 Patent.**

Asserted claims 1, 2, 16, 20, 21, 23, 24, 31, 33, 35, and 36 are method claims. To prove liability for direct infringement, VIS must establish that all method steps were either “performed by or are attributable to” Amazon, either by itself or in conjunction with others who perform steps directed or controlled by Amazon or jointly with it. *Akamai Techs., Inc. v. Limelight Networks, Inc.*, 797 F.3d 1020, 1022 (Fed. Cir. 2015) (en banc). VIS has not met its burden: it has no evidence that Amazon, by itself or with anyone else, has ever performed the steps of the asserted method claims. VIS never asserted that Amazon itself performs the method steps. That would not make sense, because only end users of the accused Fire TV and Stick products in a home or designated location are in a position to perform the method. Moreover, VIS does not assert that Amazon directs or controls others who purportedly perform the asserted method steps by, for example, conditioning sale or use of the accused Fire TV and Stick products upon customers using them to infringe. *See Akamai*, 797 F.3d at 1024. Nor does VIS assert that Amazon jointly performs the method with others. *See id.* at 1023. Accordingly, the Court should grant summary judgment in favor of Amazon that it does not directly infringe the asserted method claims of the '398 patent.

**D. VIS Cannot Show that Amazon Induced Infringement of the '398 Patent Under § 271(b).**

VIS cannot show that Amazon induced infringement of the '398 patent. 35 U.S.C. § 271(b). To establish inducement, VIS must first prove that some other party committed an act of direct infringement. *Limelight Networks, Inc. v. Akamai Techs., Inc.*, 134 S. Ct. 2111, 2117 (2014). VIS has made no such showing. VIS never identified any third party who has actually

used their cellular phone to stream content received from their cellular network to their accused Fire TV or Stick device to view the content on a television. (*See* Ex. D at 3-4; Ex. K at 110:18-24; 119:23-120:20; 123:12-17.) VIS's expert conceded that he had never used the accused products in the manner he opined infringed in his opening report. (Ex. K at 114:20-115:4.) In fact, operating the products that way generally cannot be done unless the user takes the unusual step of intentionally turning off their home Wi-Fi network (which otherwise must be on to operate the Fire TV or Stick). (Ex. H at ¶ 63.) There is no evidence Amazon encouraged this step, and its absence standing alone entitles Amazon to summary judgment that it did not induce infringement.

Additionally, VIS cannot show that Amazon "took an affirmative act to encourage infringement with the knowledge that the induced acts constitute patent infringement" of the '398 patent. *Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.*, 843 F.3d 1315, 1332 (Fed. Cir. 2016). Liability for induced infringement requires that the alleged inducer has knowledge of the patent, and VIS has not shown that Amazon had any knowledge of the '398 patent prior to the service of its complaint on July 12, 2016. *In re Bill of Lading Transmission & Processing Sys. Patent Litig.*, 681 F.3d 1323, 1339 (Fed. Cir. 2012). There can be no inducement before that time, and summary judgment is at the very least appropriate for the pre-filing period.

Nor has VIS shown that Amazon took any affirmative act to encourage infringement with the knowledge that the induced acts constitute patent infringement. "[W]here a product has substantial noninfringing uses, intent to induce infringement cannot be inferred even when the defendant has actual knowledge that some users of its product may be infringing the patent." *Warner-Lambert Co. v. Apotex Corp.*, 316 F.3d 1348, 1365 (Fed. Cir. 2003). Fire TV and Stick products are suitable for myriad non-infringing uses that do not involve mirroring a cell phone screen with Miracast, including streaming video directly from the Internet to a television. (Johnson

Report at 63.) Instead, to show active inducement, VIS must show that Amazon has taken active steps to encourage infringement, such as advertising an infringing use or instructing how to engage in an infringing use. *AstraZeneca LP v. Apotex, Inc.*, 633 F.3d 1042, 1059 (Fed. Cir. 2010); *see also Takeda Pharms. U.S.A., Inc. v. West-Ward Pharm. Corp.*, 785 F.3d 625, 634 (Fed. Cir. 2015) (label instruction was not itself sufficient to teach the infringing method). VIS does not and cannot point to any communications from Amazon to its customers to download multimedia content from a cellular network to a cellular phone and then Miracast the content to the accused Fire TV and Stick products where the content could be displayed on the attached television. Accordingly, the Court should grant summary judgment of no induced infringement by Amazon.

**E. VIS Cannot Show that Amazon Contributorily Infringed the '398 Patent Under § 271(c).**

To establish contributory infringement, VIS must establish 1) direct infringement of the asserted '398 patent claims by someone else; 2) Amazon had knowledge of the patent; 3) the accused component supplied by Amazon has no substantial non-infringing uses; and 4) the component is a material part of the invention. *See Fujitsu Ltd. v. Netgear Inc.*, 620 F.3d 1321, 1326 (Fed. Cir. 2010). VIS cannot establish several of these factors, and the Court should grant summary judgment of no contributory infringement.

As discussed above, VIS failed to adduce evidence that anyone directly infringed the '398 patent. Because VIS cannot show direct infringement, it also cannot establish that Amazon contributorily infringed. *See Fujitsu*, 620 F.3d at 1326. VIS also has not shown that Amazon had any knowledge of the '398 patent prior to the service of its complaint, and thus liability for acts before that time is precluded. *See id.* VIS has also failed to show that the accused Fire TV and Stick products are not suitable for substantial non-infringing use. To the contrary, those products are suitable for myriad uses that do not involve mirroring a cell phone screen with Miracast, including

streaming video directly from the Internet to the television display. (Ex. H at ¶¶ 142-145.) In fact, the total uses of Miracast (including the uses described above not even accused by VIS) was trivial in comparison to non-Miracast uses. (Ex. G at 28:7-12, 38:18-39:2.) Given this, Amazon decided to discontinue all Miracast features from its Fire TV and Stick devices as of early 2017. (*Id.* at 87:18-88:2.) In sum, VIS has not provided any evidence of contributory infringement, and the Court should therefore grant summary judgment.

#### **IV. THE '844 PATENT IS INVALID FOR LACK OF WRITTEN DESCRIPTION.**

The asserted claims of the '844 patent<sup>6</sup> are invalid for lack of written description under 35 U.S.C. § 112(a). As the Court recognized in its claim construction order, the specification fails to describe both the patent's claimed automatic purchase features and the dual-purpose device that monitors and communicates the user's account information. (Dkt. 139 at 27-28.) Accordingly, the Court should grant summary judgment of invalidity for the '844 patent.<sup>7</sup>

For a patent to be valid, its specification must "contain a written description of the invention." 35 U.S.C. § 112(a). A patent claim is invalid if the specification would not have objectively demonstrated to a person of ordinary skill in the art that the applicant invented the claimed subject matter when the patent application was filed. *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336,

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<sup>6</sup> Ex. B, claims 28-30, 33, 35, 38-41, 50-52, 54, and 55.

<sup>7</sup> VIS stipulated to the non-infringement of the '844 patent by the accused Amazon Dash Button while reserving both its right to appeal the Court's constructions and bring new lawsuits against Amazon. The Court should therefore rule on invalidity now: "a district court should decide validity and infringement and should enter a judgment on both issues when both are raised in the same proceeding [because] [t]o enter judgment on less than all dispositive issues can be inefficient, risking as it does the necessity of the district court and the parties undertaking participation in another long and costly proceeding." *Lindemann Maschinenfabrik GMBH v. Am. Hoist & Derrick Co.*, 730 F.2d 1452, 1463-64 (Fed. Cir. 1984); *see also Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1481 (Fed. Cir. 1998) ("trial courts should decide all litigated issues, in the interest of finality"). VIS has already asserted the invalid '844 patent against other Amazon services in a new action filed in this Court: *Va. Innovation Scis., Inc. v. Amazon.com, Inc.*, No. 2:17-cv-00422-MSD-LRL (E.D. Va.).

1351 (Fed. Cir. 2010) (en banc). To comply with this requirement, the subject matter of new or amended claims therefore must have been disclosed in the original patent application. *See Purdue Pharma L.P. v. Faulding, Inc.*, 230 F.3d 1320, 1323 (Fed. Cir. 2000). This prevents inventors from “overreaching” by including “post hoc claims that were not part of the original invention.” *Purdue Pharma, L.P. v. F.H. Faulding & Co.*, 48 F. Supp. 2d 420, 427 (D. Del. 1999), *aff’d sub nom. Purdue Pharma*, 230 F.3d 1320. Compliance with the written description requirement may be decided on summary judgment where no reasonable fact finder could find for the patentee. *Atl. Research Mktg. Sys., Inc. v. Troy*, 659 F.3d 1345, 1353 (Fed. Cir. 2011).

The asserted claims are quintessential examples of “post hoc claims” that violate the written description requirement. *See Purdue Pharma*, 48 F. Supp. 2d at 427. As the Court noted in its claim construction order, the ’844 patent describes three general ideas: (i) local caching and optimized delivery of internet content to users; (ii) providing secure payment using wireless communications to a local wireless HUB; and (iii) the delivery of product status updates through a wireless connection (*i.e.*, a sensor in a diaper reads the wetness and other qualities in a diaper and updates the appropriate caregiver that the diaper needs changing). (Dkt. 139 at 24-26; *see also* Dkt. 108 at 16-20.) The asserted claims purport to cover a single device that provides secure payments and delivers products status updates in the manner described in (ii) and (iii). However, nothing in the original patent application or the specification describes such a device. These claims were added after Amazon released the accused Amazon Dash Button.

The original patent application filed on September 2, 2014 contained two claims directed to locally caching internet content. (Dkt. 139 at 27; *see also* Dkt. 108 at 17-18; 108-14.) Those two claims were rejected and later cancelled, but VIS submitted an amended application with 63 additional claims directed either to locally caching internet content or to the new idea of sensing

and delivering a product status update. (Dkt. 139 at 27; *see also* Dkt. 108 at 17-18; 108-17.) None of these additional claims related to purchasing items. In April 2016, more than a year after the release of the Amazon Dash Button, VIS amended the item status claims so that the *same* wireless device that senses a condition and delivers an item status update *also* can make “purchase requests.” (Dkt. 139 at 27; *see also* Dkt. 108 at 18; 108-18.) But nowhere does the specification disclose a single device that senses a condition, delivers an item status update, and makes a purchase request. As the Court found, the post hoc nature of these claims places them “in direct tension with the specification” because “there is no description of this combined device in the specifications [and] it is nearly impossible to tell how it would work.” (Dkt. 139 at 27-28.)

**A. The '844 Patent's Specification Does Not Disclose a “Wireless Device” or “Wireless Signal Transmitter” as Recited in the Asserted Claims.**

The asserted claims require a single “wireless device” or “wireless signal transmitter” that transmits an (1) an item status signal, (2) a unique identifier corresponding to the wireless device, and (3) user account information. A “purchase request for merchandise regarding the updated condition [is then made] based on a successful transmission of the item status signal.” (*See, e.g.,* Ex. B at 16:25-59.) In other words, the wireless device’s transmission of the status of an item triggers an automatic purchase of that item.

The specification does not disclose any single “wireless device” or “wireless signal transmitter” that meets the three required elements. (Dkt. 139 at 27-28 (“[T]here is no description of this combined device in the specifications” and “it is nearly impossible to tell how it would work.”).) Instead, the specification discloses two separate wireless devices—a diaper condition sensing module (DCSM) and a user equipment (UE)—each of which performs some, but not all, of the required elements. The claimed invention lacks support in the written description.



### **1. The DCSM Cannot Be the Claimed Device.**

The DCSM described in the specification does not contain or transmit “user account” information. The specification describes the DCSM as a sensor and transmitter, either within the diaper itself or as a probe connected to the diaper (Ex. B at 10:8-9, 46-67), that monitors the diaper for conditions indicating that the diaper is wet (*id.* at 10:9-25). When it detects that the diaper is wet, the DCSM sends an “item status signal” to a processor. (*Id.* at 10:26-29.) The DCSM also contains a unique identifier. However, the processor only uses the DCSM’s unique identifier to identify which diaper is wet and which corresponding caregiver to notify. (Dkt. 139 at 35-36.) The processor does not purchase new diapers after identifying the DCSM’s unique identifier on receipt of an item status signal. (*Id.* at 37.) And the DCSM does not transmit user account information: it is associated with a diaper, not a user.

### **2. The UE Cannot Be the Claimed Device.**

The UE described in the specification does not transmit either an item status signal *or* a unique identifier that causes a purchase based on an item status signal. The UE is a cell phone or similar personal computing device that a user can use to browse and purchase products online *after* being alerted to the condition of a product. (Ex. B at 4:29-36; 12:46-50.) VIS concedes that the described UE does not sense the wetness of the diaper or transmit the item status signal that the diaper is wet. (Dkt. 139 at 37 n.9.) Indeed, the Court has already determined that the specification is clear that only the DCSM sends an item status signal. (*Id.* at 43.) While the UE has a “Tag ID,” associated with user account information, the TagID is used to authenticate a purchase request. The Tag ID does not initiate a purchase based on an item status signal. (*Id.* at 37-39.)

The amended claims combine the various functions of the DCSM and the UE into a single device. (*Id.* at 40.) Nowhere in its four corners does the specification describe such a device. (*Id.*

at 27.) This renders the claims invalid for lack of written description. *See Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997) (invention must be disclosed through “descriptive means” such as the “words” or “figures”); *Atl. Research*, 659 F.3d at 1354 (affirming summary judgment of invalidity where the asserted claims included a configuration of a handguard device that was not described in the specification). In fact, the Federal Circuit has previously considered claims that, like VIS’s, ascribe multiple functions to one device despite a specification that discloses those functions as performed by different devices. In *Rivera v. International Trade Commission*, 857 F.3d 1315 (Fed. Cir. 2017), the court held that the specification did not disclose the claimed “integrated filter cartridge”—a single structure for use in coffee makers comprising an external “cartridge” (a receptacle) and a “pod” (filter packets inside containing coffee). *Id.* at 1319-20. Rivera asserted there was written description because the patent disclosed the “pod,” which could serve the function of both a pod and a cartridge, and those functions together comprise an integrated filter cartridge. *Id.* The court rejected this argument, stating that “there is no hint or discussion of a cartridge . . . that also serves as the ‘pod’” and that the disclosure instead described an invention in which the pod and cartridge were distinct. *Id.* Similarly here, nothing in the specification discloses a *single* device that performs the functions of both the DCSM (which transmits an item status signal and a unique identifier) and the UE (which transmits user account information). Therefore, the claims fail to satisfy the written description requirement.

**B. The '844 Patent's Specification Does Not Disclose an Automatic Purchasing Process.**

The Court has already noted the asserted claims purport to cover “a process in which products are *automatically* ordered based on a detected updated condition of some merchandise.” (Dkt. 139 at 27 (quoting Dkt. 108 at 18).) But “[t]his automatic purchasing is not described at any point in the specification.” *Id.* Indeed, the specification discloses that a purchase may occur after the

user has been “alert[ed] of both the diaper condition and the low diaper inventory” and only “[w]hen the user is ready to make a purchase.” (Ex. B at 12:44-50.) Because the specification does not disclose any automatic ordering process triggered by a detected updated condition of some merchandise, the Court should grant summary judgment of invalidity for lack of written description on this ground, as well.

**V. THE ’140 PATENT IS INVALID AND VIS CANNOT SHOW THAT AMAZON INFRINGED.**

**A. The ’140 Patent Is Invalid Because It Claims Ineligible Subject Matter Under 35 U.S.C. § 101.**

The Court’s claim construction order confirmed that the ’140 patent claims patent ineligible subject matter under 35 U.S.C. § 101. Amazon previously moved to dismiss under Section 101 because the ’140 patent claims the idea of securely processing credit card transactions with a separate payment server, and the claims add conventional elements (*i.e.*, off-the-shelf servers capable of standard functions) that add nothing inventive to this idea. (*See generally* Dkt. 63 & 78.) The Court deferred this issue until after claim construction: “although the broad functional language in the ’140 patent’s claims raises significant questions as to patent eligibility,” the Court determined it did not have a “full understanding” of the claimed subject matter. (Dkt. 79 at 2.)

The Court’s claim construction order describes the purported invention in a nutshell:

Once the purchase request [by the user] has been made, the buyer is “shifted” from the merchant server to the secure payment server . . . [and then] the server performs the standard functions which, according to the patent, were performed in the prior art . . . . Specifically, the payment server receives the credit card information over an encrypted connection which transmits the payment information to the acquiring bank. The acquiring bank then decrypts the information and sends it to the buyer’s bank, which processes the payment. If the buyer’s bank is able to process the credit card payment, then the transaction is confirmed through the merchant server.

(Dkt. 139 at 44-45.) In other words, the only potential inventive concept in the patent is the shift

from the merchant server to the payment server, embodied in the claim term “switched.” The rest of the patent discloses only conventional functions of a computer. But the Court also observed that the ’140 patent lacks any detail regarding the shift between servers. (*Id.* at 46.) That sort of functional claiming, *i.e.*, claiming the result of “switching” without any detail as to how it is achieved, is insufficient to render the patent eligible as a matter of law. Accordingly, the Court should grant Amazon’s renewed motion and rule that the ’140 patent is invalid under Section 101.

**1. *Alice* Step 1: The ’140 Patent Is Drawn to the Idea of Securely Processing Credit Card Transactions with a Payment Server.**

“[A]t step one, the question is not whether the patent’s claims involve or relate to an abstract principle, but instead whether the ‘character as a whole’ or the focus of the claims center on an abstract idea.” *Va. Innovation Scis. v. Amazon.com, Inc.*, 227 F. Supp. 3d 582, 592 (E.D. Va. 2017) (quoting *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1336 (Fed. Cir. 2016)). Courts consider whether the claims “‘focus on a specific means or method that improves the relevant technology’ or are ‘directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery.’” *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1241 (Fed. Cir. 2016). Patents that do not claim a particular way of carrying out an invention, but instead “merely claim the resulting systems” are invalid. *Id.*

The Supreme Court and Federal Circuit have repeatedly held that patents directed to processing online financial transactions that do not claim a specific technical solution for doing so are patent-ineligible. In *Alice*, the Supreme Court held claims directed to “the concept of intermediated settlement” to be a “fundamental economic practice,” and therefore an unpatentable abstract idea. *Alice*, 134 S. Ct. at 2356. In *OIP Technologies, Inc. v. Amazon.com, Inc.*, 788 F.3d 1359 (Fed. Cir. 2015), the patent claimed an automated system for setting e-commerce product prices.

*Id.* at 1360. The Federal Circuit held that the claims were directed to offer-based price optimization, an idea similar to other fundamental economic concepts that are not patent-eligible. *Id.* at 1361-62. It further noted that limiting a longstanding commercial practice to an e-commerce setting does not make the idea any less abstract. *Id.* at 1363.

The '140 patent is directed to the commercial practice of securely processing a credit card transaction with a payment server. It claims that result, but does not disclose or claim any new or improved technology, such as a specific server, special programming, or new encryption protocol, for achieving it. Instead, it claims a series of conventional steps performed in any online transaction: receiving and transmitting information. The payment server is not unique or special in any way. It is a conventional server using standard encryption and performing standard operations.

The patent's suggestion to use two servers instead of one does not render the claimed idea any less abstract. *See, e.g., Intellectual Ventures II LLC v. JP Morgan Chase & Co.*, No. 13-CV-3777, 2015 WL 1941331, at \*9 (S.D.N.Y. Apr. 28, 2015) (“[i]t is no less abstract to refer to two packets as it is to refer to one”); *GoDaddy.com LLC v. RPost Commc’ns Ltd.*, No. 14-CV-00126, 2016 WL 3165536, at \*19 (D. Ariz. Jun. 7, 2016) (adding “intermediate server” between two computers insufficient to confer patent-eligibility). And there is no new technology in the '140 patent. To the contrary, it repeatedly refers to conventional technology that it acknowledges was already in wide use in e-commerce when the patent was filed. The claims of the '140 patent are thus abstract under *Alice*'s step one.

## **2. *Alice* Step 2: The Claim Elements Add Nothing Inventive.**

Because the '140 patent is directed to an abstract idea, the Court must “determine whether it contains an ‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.” *Alice*, 134 S. Ct. at 2357 (quoting *Mayo Collaborative Servs. v. Prometheus*

*Labs., Inc.*, 132 S. Ct. 1289, 1294 (2012)). Neither generic computer technology nor “well-understood, routine, conventional” or “purely functional,” elements can supply the required inventive concept. *Id.* at 2357-59 (quoting *Mayo*, 132 S. Ct. at 1294); *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 716 (Fed. Cir. 2014) (“[T]he use of the Internet is not sufficient to save otherwise abstract claims from ineligibility under § 101.”); *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014) (“That a computer receives and sends the information over a network—with no further specification—is not even arguably inventive.”). Rather, a patent must claim a “technology-based solution (not an abstract-idea-based solution implemented with generic technical components in a conventional way).” *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1351 (Fed. Cir. 2016). The claims of the ’140 patent simply recite the idea of securely processing credit card transactions with a payment server, and propose achieving it on the Internet using conventional technology used in a conventional manner. They are not inventive.

At the motion-to-dismiss stage, VIS contended that two claim elements provide an inventive concept: (1) “switching” between communication channels that have different security characteristics, and (2) “specific security requirements,” namely “128 bit encryption for the credit card payment information.” (Dkt. 76 at 20-21.) Neither saves the patent.

First, the patent includes no language anywhere that would suggest switching between communication channels is an inventive concept that provides an advantage over the prior art. Even if it did, the specification and claims fail to disclose how this switching is accomplished. Claim 17 describes the element as “the buyer has been switched from the website listing the items to a website supported by the payment server.” (Ex. C at 8:1-3.) This nondescript switch occurs “after an indication from the buyer to buy the one or more of the items.” (*Id.* at 8:3-5.) This passive-voice construction conveys no actual information or specifics about how the switching

occurs. The patent merely claims that result. The Court itself acknowledged the patent's failure on this point, noting that neither party could adequately explain "what causes switching to occur" because of "the lack of detail [in the patent] concerning the term 'switched.'" (Dkt. 139 at 45-46.) Such "abstract functional descriptions devoid of technical explanation as to how to implement the invention" do not contribute an inventive concept required by *Alice*. *In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607, 615 (Fed. Cir. 2016).

Indeed, switching from server to server by clicking a link is a fundamental feature of the web and was ubiquitous at the time of the patent. As the Federal Circuit observed in *DDR Holdings, LLC v. Hotels.com, L.P.*, a defining feature of the World Wide Web is the ability of a user to move seamlessly from server to server with a click of a mouse. 773 F.3d 1245, 1258 (Fed. Cir. 2014) (describing the "near-instantaneous transport . . . made possible by standard Internet communication protocols" and how a user could be "relocated" to a different server). Moreover, many prior art systems used a method of switching from a less secure connection to a more secure connection in this manner, including U.S. Patent No. 5,822,737 by Ogram, and the late 1990's version of Amazon.com itself. (See Ex. N at ¶ 91.) Without disclosing some new and improved *means* for performing such switching, simply claiming the *result* of switching is not inventive. See *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1356 (Fed. Cir. 2016).

Second, the patent itself concedes that the "specific security requirements" on which VIS relies are simply use of a conventional security protocol. Claims 17 and 19 invoke a security protocol that provides "at least 128 bit encryption for the credit card payment information." (Ex. C at 8:19-22, 8:64-67.) Claims 18 and 20 reference a Secure Sockets Layer (SSL) protocol. (*Id.* at 8:35-36, 9:15-16.) The specification makes clear that such technology was conventional at the

time. It describes how when a buyer purchases products online, “the transfer of credit card information [is] made under a security protocol, for instance a Security Socket Layer Protocol (SSL), very commonly a 128 bit protocol, that provides a high degree of security.” (*Id.* at 2:8-13.) The patent notes that its figures depicting the prior art system and the purported invention both use “secure credit card information transmission systems of the 128 bit SSL or SET” and that this is “an indication of available bit level and security protocol.” (*Id.* at 5:11-15.) The use of conventional security protocol cannot be an inventive concept that saves the VIS patent. *See Apple*, 842 F.3d at 1244 (finding no inventive concept where specification “expressly recit[ed] that the hardware needed was typical and that the programming steps were commonly known”).

### **3. The ’140 Patent Is Unduly Preemptive.**

“In order to survive an eligibility inquiry, the patent’s claims must narrow the abstract idea enough to avoid ‘the preemption concern that undergirds our § 101 jurisprudence.’” *Va. Innovation Scis.*, 227 F. Supp. 3d at 592 (quoting *Alice*, 134 S. Ct. at 2358). The ’140 patent purports to preempt all e-commerce methods that use a two (or more) server system to process credit card payment information. Indeed, in order to construe the switching limitation so that it would not “render the patent logically impotent,” the Court found it necessary to construe it as allowing either the user or the merchant server to instigate switching to the payment server. (Dkt. 139 at 46-47.) The ’140 patent contributes no solutions to the public store of knowledge that could justify such an extensive monopoly. Once the Court has held a patent ineligible under the *Alice* test, it does not need to determine separately that the patent is unduly preemptive to invalidate it. But here, the risk of preemption from the ’140 patent is clear and confirms its lack of eligibility. The Court should grant summary judgment of invalidity under Section 101.



**B. The '140 Patent Is Invalid for Lack of Written Description Because the Specification Does Not Disclose “Switching” from “a Server Supporting the Website Listing the Items” to a “Payment Server,” as Purportedly Claimed.**

The failure to describe the critical “switching” step not only establishes that the '140 patent is patent-ineligible, but also renders it invalid for lack of written description. Claims 17 through 20 each require that “the online communication of the buyer has been switched from the website listing the items to a website supported by the payment server.” (Ex. C.) In other words, the buyer is shifted to a secure payment server after initiating a purchase request with an indication from the buyer’s computer. (Dkt. 139 at 44-47.) However, the specification does not disclose how this switching requirement is accomplished. (*See id.* at 46.) The claims therefore lack an adequate written description of “switching,” and the Court should grant summary judgment of invalidity for failure to comply with the written description requirement.

To comply with the written description requirement, the specification must objectively demonstrate to a person of ordinary skill in the art that the applicant actually invented the claimed subject matter. *Ariad Pharm.*, 598 F.3d at 1351. Here, the specification references the claimed switching step, but provides no description of how it is accomplished. All that it offers is “[w]hen a product displayed on a particular merchant website on the server 32 is determined by the buyer to be purchased and the buyer indicates a desire to submit credit card information, the buyer is shifted to the payment server 33 for direct communication therewith for entry of credit card information onto the secure transaction system.” (Ex. C at 4:33-39.) The figures in the specification do not remedy the lack of description. They merely illustrate the step with an arrow between the Web, DB Server and the Payment Server. (*Id.*, Fig. 3 (arrow marked 3).)

The specification does not describe or reference *any* programming, algorithm, or other means to explain how to otherwise switch the user from the merchant server to the payment server.

*Cf. Ariad Pharm.*, 598 F.3d at 1345 (noting that the “requirement to describe one’s invention is basic to patent law”). Indeed, VIS’s own expert could not identify any mechanism for shifting from the web DB server to the payment server disclosed in the specification. (Ex. K at 105:15-106:15.) He further conceded that the specification does not describe that the payment server instigates the switching, and that it in fact “is silent” on whether the switching is controlled by the payment server or some other third-party server. (*Id.* at 99:14-22, 103:18-104:10.) The total absence of any description for how the switching is performed means the ’140 patent fails to convey that the applicants had actually invented that claimed switching step at the time of the application. (Ex. N ¶ 64); *see Rivera*, 857 F.3d at 1322 (“The knowledge of ordinary artisans may be used to inform what is actually in the specification, but not to teach limitations that are not in the specification . . . .”) (internal citation omitted). The Court should grant summary judgment of invalidity for claims 17 through 20 because they fail to comply with the written description requirement. *See In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1319 (Fed. Cir. 2011) (affirming summary judgment where the claims required “visually displaying customer number data” but the specification did not describe that step).

### **C. VIS Cannot Show Infringement of the ’140 Patent.**

There is also no genuine issue of material fact that the accused Amazon Pay service does not infringe any of the asserted ’140 patent claims. The claims cover methods and computer programs for processing online credit card purchases where a buyer, after selecting products for purchase on a merchant website, is switched from a “Web, DB server” to a “payment server” to enter credit card information. (Ex. C at 4:18-37, claims 17-20.) The asserted claims all require that: (1) the “*online communication of the buyer has been switched*” from the website listing the items to a website supported by the payment server after an indication from the buyer to buy the one or

more of the items; and (2) the transmission of information about the items for purchase *is less secure than* transmission of credit card payment information from the buyer.

Amazon Pay does not meet these limitations. Amazon Pay is a service that allows users to purchase goods on third-party merchant websites using payment methods that they have stored in their Amazon account. (Ex. O at ¶ 46.) During the merchant’s checkout process, the user is provided the option to use Amazon Pay. (*Id.* at ¶ 65.) After providing Amazon account credentials, the user can select from among the previously stored payment and shipping information associated with that Amazon account to complete the transaction with the merchant. (*Id.* at ¶¶ 65, 95.)

1. **Amazon Pay cannot infringe under the court’s construction of “online communication of the buyer has been switched from the website listing the items to a website supported by the payment server” because the switch occurs before an indication from the buyer to buy the one or more of the items.**

The Court has construed “online communication of the buyer has been switched from the website listing the items to a website supported by the payment server” to have its plain and ordinary meaning. (Dkt. 139 at 47.) The Court expressly stated as part of its construction of this term that the “whole point of the patent is to switch the communication channel *after* the buyer decides to make a purchase.” (*Id.*) The Court’s ruling is consistent with the remainder of the claim limitation, “wherein the switching of the online communication of the buyer is after an indication from the buyer to buy the one or more of the items.”

Amazon Pay does not meet the limitation because switching from the merchant site to the Amazon payment server occurs *before* a buyer has made a decision to purchase items. In his infringement report, Dr. Melendez describes his “switching” to the Amazon payment server during a visit to the Woot! website. He placed an Amazon Fire HD 6 Tablet in his shopping cart, selected the option to “proceed to checkout,” and was served a Woot! Website sign-in page with the option

to “Login with Amazon.”<sup>8</sup> (Ex. E at 18, Figures W3, W4.) After choosing to “Login with Amazon” Dr. Melendez “was switched to a new webpage” on Amazon.com. (*Id.* at 20.) After this switch to the Amazon server for login, he was switched back to the Woot! website, which then presented the option of choosing a credit card number from his Amazon account or entering a new credit card number. (*Id.* at 20, Figure W6.) After selecting the second option, he was switched back to the Amazon payment server where he entered the credit card payment information (*see id.* at 18-24, Figures W6, W7). After entering this information, he was *switched back again* to the Woot! website where he selected the newly stored credit card number *and then provided his indication to buy* by selecting the button “place your order.”<sup>9</sup> (*Id.* at 24; *id.* at 25, Figure W9.)

Because VIS cannot establish that Amazon Pay satisfies the claim limitation “the online communication of the buyer has been switched from the website listing the items to a website supported by the payment server wherein the switching of the online communication of the buyer is *after* an indication from the buyer to buy the one or more of the items,” the Court should grant summary judgment of non-infringement for the ’140 patent.<sup>10</sup>

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<sup>8</sup> Simply placing an item in a merchant website “shopping cart” does not itself provide an indication to buy. The user can remove the item from the cart, add additional items, or leave the site entirely without buying the items in the cart. (Ex. O at ¶ 59.)

<sup>9</sup> VIS’s expert concedes that selecting “place your order” is an indication to buy. (Ex. K at 60:8-11 (“Q: And if a user presses that ‘place your order’ icon, is that an indication to buy one or more items? A: It’s—it’s also an indication to buy one or more items.”); *see also id.* at 63:11-15.)

<sup>10</sup> Amazon Pay also does not perform the limitation “the credit card payment information is received . . . after an indication from the buyer to buy the one or more of the items” for similar reasons. Users of Amazon Pay select a default credit card the buyer has previously associated with an Amazon account, long before any indication by the buyer to buy items from the merchant website. (Ex. O at ¶ 46.) VIS concedes that selection of a stored default credit card is non-infringing. (*See, e.g.,* Ex. K at 37:14-19.) And even in Dr. Melendez’s Woot! Website example, where credit card information is entered during the buyer’s shopping session, that information is received at steps W7 and W8 *before* the user provides an indication to buy at step W9 when he selects “place your order.” (Ex. E at 20, 24, Figures W7, W8, W9.)

2. **Amazon Pay does not perform the limitation of “transmission of information about the items for purchase between a server supporting the website listing the items and the buyer . . . is less secure than transmission, from the buyer, of the credit card payment information” because Amazon has no control over how merchants transmit information about items for purchase.**

The asserted claims require the transmission of information about the items for purchase to be “less secure” than the buyer’s transmission of the credit card payment information. (Ex. C, claims 17-20.) Amazon Pay does not meet this limitation because Amazon does not implement or control the security of the transmission between the buyer and the merchant website. *See Akamai*, 797 F.3d at 1022 (direct infringement of method claims occurs only “where all steps of a claimed method are performed by or attributable to a single entity”); *Centillion Data Sys., LLC v. Qwest Commc’ns Int’l, Inc.*, 631 F.3d 1279, 1286 (Fed. Cir. 2011) (direct infringement for systems claims requires defendant to “put the claimed invention into service, *i.e.*, control the system and obtain benefit from it”). The merchant, not Amazon, implements and controls security of the transmission between its own website and the buyer’s computer, and the use of a “more secure” or “less secure” transmission for a particular session is totally at the buyer’s discretion. (*See* Ex. O at ¶¶ 105-106.) Further, Amazon recommends that merchants *always* use a secure connection (*i.e.*, HTTPS) similar to the security of connections to Amazon’s servers. (*Id.* at ¶¶ 104, 109; Ex. T (AMZ-VIS00004621-4623).) Amazon recommends a transmission that is “more secure” or “as secure” as the transmission of credit card information for use with Amazon Pay, not “less secure.”

VIS concedes that Amazon does not control whether the merchant’s website and server perform this limitation. (Ex. E at 48-49 (explaining that “[m]erchant websites typically provide a listing of one or more products for sale using the unsecure connection provided by the Hypertext Transfer Protocol”).) In fact, VIS’s expert admitted that the merchant provides the security of

transmissions before any connection to Amazon’s server is established. (*See, e.g.*, Ex. K at 13:14-17 (“Q: Right. So when you added the Fire tablet to your shopping cart, you already had a secure https connection with the Woot merchant website, correct? A: That is correct.”); *see also id.* at 11:11-18; 13:18-14:2.)

Even if Amazon had any influence over how merchants implement security on their websites, it recommends that merchants *always* use a secure connection. (Ex. O at ¶¶ 104, 109; Ex. T.) In other words, Amazon directs merchants to use at least an equal level of security to that used for connecting to Amazon servers. VIS’s expert offered no opinion that the HTTPS connection used by the merchant to transmit item information is somehow “less secure” than an HTTPS connection used by Amazon. (Ex. K at 80:11-23.) VIS instead contends that even where both servers use HTTPS protocol, a transmission to Amazon’s server is more secure because a user must login to access her account. (Ex. E at 49.) But login credentials (which the merchant may also require, outside of any control by Amazon) merely determine what information on the server the user may access. They have nothing at all to do with the security of the *transmission* of information. (*See* Ex. O at ¶ 111.) Because VIS cannot establish that Amazon Pay satisfies the claim limitation that the transmission of information about the items for purchase is less secure than transmission of the credit card payment information,” the Court should grant summary judgment of non-infringement.

## **VI. CONCLUSION**

For the reasons stated, Amazon respectfully requests that the Court grant its motion for summary judgment of non-infringement of the ’398 patent, invalidity of the ’844 patent, and non-infringement and invalidity of the ’140 patent.

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Respectfully submitted,

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**CERTIFICATE OF SERVICE**

I hereby certify that on the 21st day of September, 2017, I electronically filed the foregoing pleading with the Clerk of the Court using the CM/ECF System, which will then send a notification of such filing (NEF) to the following:

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